

OGIM PERKINS



here word 'eugenics'?" asked Sim Perkins of Uncle Ashdod in a moment of thoughtfulness. With horror and distress," said Uncal husband of the queen of Tarata. Seven of her was pock-marked and six of her was built so she toted in

"How many of her was there?"

d Sim Perkins, "What was you at that
of your lyin' career? A Mormon?"



THE Old Salt Discusses Eugenics, Which He Says Should Be Pronounced "With Horror and Distress"

"And I Hope I Gave 'em the Dod-Blamest Indigestion They Ever Had In Their Contaminated Lives"



Cancer Germs Live In Water and Are So Small That They Have Never Been Seen

Rene Bache

Boiling Water In Only Sure Way to Prevent Disease From Attacking One; Some Water Supplies Cause Many Cases.

B UFFALO, N. Y., Feb. 7.—Further announcement is about to be made by the New York state cancer laboratory, of discoveries which represent the first definite and exact knowledge that has been obtained in regard to the most dreaded and most mysterious of human diseases.

past has been attacked from every possible coint of vice by scientific investingators in all parts of the world. For a pathologist would say—and under such conditions the finny posed to multiplied chances of infection.

Problem is One of Prevention.

So far as the fishes are concerned, the problem is one of prevention. In the cause of human diseases. B announcement is about to be made by the New York state cancer laboratory, of discoveries which repre-sent the first definite and exact knowl-Summed up in a few words, they are ns follows:

Cancer is caused by a germ. This fact, hitherto disputed, is settled at last. The germ (so tiny as to be invisible to a high power microscope) is carried by water. Cancer is contracted, presumably, by drinking water that contains this

by drinking water that contains this parasitic bacterium.

Boiling kills the germ. It follows, then, that the best protection against cancer is to avoid drinking water that has not been boiled. Filtering is useless, imasmuch as the parasite is so minute as to pass readily through any filter.

The germs are not injured by freezing. They may be preserved indefinitely by drying the cancerous tissue contain-

ing. They may be preserved indefinitely by drying the cancerons tissue containing them, from which after many months they can be separated out (still retaining their vitality) by grinding and filtering the material. The filtrate thus obtained, when injected into the body of a human being or other animal, will promptly start a malignant growth—
i. e., a cancer—in the spot where the wound was made.

Accordingly, it may be said that, al-

Accordingly, it may be said that, although the germ itself has not been found and presumably never will be discovered a specific cancer virus has been obtained. This virus has been separated from three different forms of cancer in the chicken. It is distinct

separated from three different forms of cancer in the chicken. It is distinct in character and effect for each type, one form possessing the fibrous tissues with which it cames into contact to adopt an abnormal development, charging into cartilians and bone!

Germs Toe Small to See.

One should realize that the germs of a good many infectious diseases—among them smallpox, scarlet fever and measles—are so small that they are likely never to be in a proper sense discovered. The blood of a yellow fever sufferer, after passing through a Pasteur filter, still contains the specific bacterial parasite (as proved by the fact that moculation with the fluid will reproduce the malady), but nobody has ever seen it. This circumstances, however, has not prevented the doctors from wining not prevented the doctors from wiping out yellow fever; and it may happen similarly with cancer-a thing devoutly to be hoped, inasmuch as, after passing 45 years of age, one woman out of every leight, and one man out of every 18, dies of this ghastly complaint.

Pond Spreads Cancer.

On the estate was a pond, an acre and a half in extext, at one end of which stood the "schloss," while on the other sides were farm hulldings and a of trouts and salmons—at fish hatcher is over the greater part of the United States. Rainbow trout, hatched in New dependents of the noble family, including the butcher, the suker, the shoemaker, etc. All the drinking water for that country developed the same disease showing, apparently, that the germs were transported with them half way around the world.

It has been suggested that domestication is responsible for the malady, but this cannot be true because cancer of the thyroid appears occasionally in wild died of cancer—eight of them of cancer of the stomach.

Baffles Science for Ages.

The cancer problem during many years

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It has been suggested that domestication is responsible for the malady, but this cannot be true because cancer of the thyroid appears occasionally in wild died of cancer—eight of them of cancer is concerned; the cent is deady through any object with the same that of a least water supply to each true transported with them half way are the permits of the united i other sides were farm buildings and a small village tenanted by retainers and dependents of the noble family, including the butcher, the baker, the shoemaker, etc. All the drinking water for the great house and for everybody else, was pumped directly out of this pond in which there were carp, and many of the latter, when taken with a scinenet, proved to be affected with cancer. It was learned that in 10 years 20 persons in the immediate neighborhood had died of cancer—eight of them of cancer of the storage.

of the stomach.

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gators in all parts of the world. For a long time it has been known that many animals besides man were hable to the complaint, which has been studied in rats and mice, and in various other animals. The laboratory at Buffalo has resently sought colightenment through an inquiry specially directed to cancer in fishes, and from this source the most striking and illuminating discoveries. striking and illuminating discoveries

striking and illuminating discoveries have proceeded.

It started with a visit paid by Dr. Harvey R. Gaylord, director of the laboratory, to a fish hatchery in New York state, where an alarming epidemic had broken out among the brook trout. The maiady took the form of a malignant tumor at the function of the gills, which proved on examination to be a true cancer. It was present in no fewer than 700 fish, and began with a swelling of the thyroid gland in the throat—in other words, a goiter.

The same disease, it was ascertained, had for a long time scriously affected several of the government hatcheries (as well as those belonging to various states) where trout were propagated. Pursuit of the inquiry led, later on, to a joint investigation of the subject by the Butfalo laboratory and the government fisheries bureau, involving many interesting and instructive experiments.

To start with, there was no question

To start with, there was no question that the trouble was cancer. Under the microscope, the structure of the growths was indistinguishable from that of the kind of malignant tunior which in man is known as "carcinoma."

Water Carnes Cancer Germs,

Now, one thing that quickly excited at-tention was the fact that where healthy trout occupied a pond which received its water supply from another pond containing cancerous fish, they soon became themselves infected with the disease. And the phenomenon was obvious in exaggerated degree when there was

in exaggerated degree when there was a series of such connected pends—each pond developing a higher percentage of infected trout than the one above it, until the disease was at its worst in the lowermost of all. This seemed to point plainly enough to a concentration of cancer germs carried by the water from pond to pond downward.

In short, the evidence of germ infection was overwhelming; and it was manifest that the invisible parasite responsible for the mischief was carried by water. A small quantity of jodine, or arsenic, or mercury, introduced into the ponds, had a tendency to check the growth of the tumors, but the effect was obviously of a therapeutic (medicinal) character merely.

Cancer of the thyroid seems to be permanently established as a disease of the salminidae—i. e., the various species

the salminidae—i. e., the various species of trouts and salmons—at fish hatcher

ject, efforts will be made to get rid of the disease by the annual cleansing or the disease by the annual cleansing and painting of hatching troughs, by the periodical emptying and sun drying of dirt pends (or a change to cement construction), by the adoption of other methods hostile to germs, and finally by the selection and breeding of cancerresistant races. Some of the salmonidae—as, for example, the Scotch sca trout—seem to be relatively immune to cancer. Indians Immune.

Here, indeed, is another point in which fish cancer resembles human cancer, in- as much as it has a marked prevalence in certain races, as compared with others. Immunity to it is specially marked among American indians. tribes, on reservations from the north rumost to the southernmost limits o his country, enjoy an almost absolute freedom from cancer, whereas the whites iving in their immediate neighborhood as much afflicted by the malady as

Observation at the hatcheries has shown that certain "lots" of fishes are particularly subject to the cancer infection, while other lots are comparatively immune. Similarly, cancer among human beings "runs" in certain families; in other families it is exceedingly are

The discovery that the cause of cancer is a water borne germ accounts for many phenomena in relation to the disease which hitherto have seemed mysterious. It explains how it happens that the healthiest persons are often assailed by the malady, and why inhabitants of the pest residential actions. best residential sections, enjoying all the advantages of a sanitary environment, are as subject to it as those who dwell in filthy slums. This latter, by the way, is one fact that has tended to up-set the theory that the humble and clu-sive hedburg period as a manufactured. sive bedbug acted as a cancer carrier. Explains "Cancer Districts."

If the germ be conveyed in drinking water, there is no longer any reason for puzzlement in regard to the socalled "caneer districts." Such a district has "cancer districts." Such a district has been under watch in the village of Cor-meilles, in Normandy, where in one street of 54 houses there are 17 dwell-ings which ngs which in a short time have furnighed 21 cases of cancer. There are cancer districts in every country. One of the best known of them is the township of Brookfield, close to the center of New York state, which for a great many years has had a cancer death rate more than double that of surrounding forwaships.







AL OSTMAN